Forest Insect and Disease Management Group
2500 Shreveport Highway
Pineville, Louisiana

1980 Reports

March 21, 1980

Trip Report - Report # 80-2-11

Robert C. Loomis, Field Representative
Alexandria Field Office

Traveler- Forrest L. Oliveria

Date- January 15 - 17, 1980

Destination- Ouachita National Forest (Arkansas), Winona District and Caddo District

Purpose- To assess pine webworm and pine tip moth damage in 1-year-old pine plantations (Figs. 1 and 2)

Background- On January 10, 1980, Bob Weise from the Supervisor's Office, Ouachita National Forest in Arkansas, called the FIDM office at Pineville about a problem in 1-year-old pine plantations. He asked that someone be sent to the Ouachita to advise them on the insect problems that were occurring in the 1-year-old pine plantations. To the best of his knowledge, the problem was being caused by pine webworm and pine tip moth.

A trip was scheduled to the Ouachita to survey the problem during the week of January 14, 1980. This trip was in conjunction with a scheduled trip to the Mt. Ida seed orchard to collect Furadan® monitoring samples.

Action- On January 16, Forrest Oliveria met Keith Holman at the Mt. Ida seed orchard in Mt. Ida, Arkansas. We then drove to Glenwood where we met Jim Sitton, Supervisory Forester for the Caddo District of the Ouachita National Forest. Jim took us to a pine plantation in Compartment 35 that had suffered pine webworm and pine tip moth damage during the 1979 growing season (table 1).

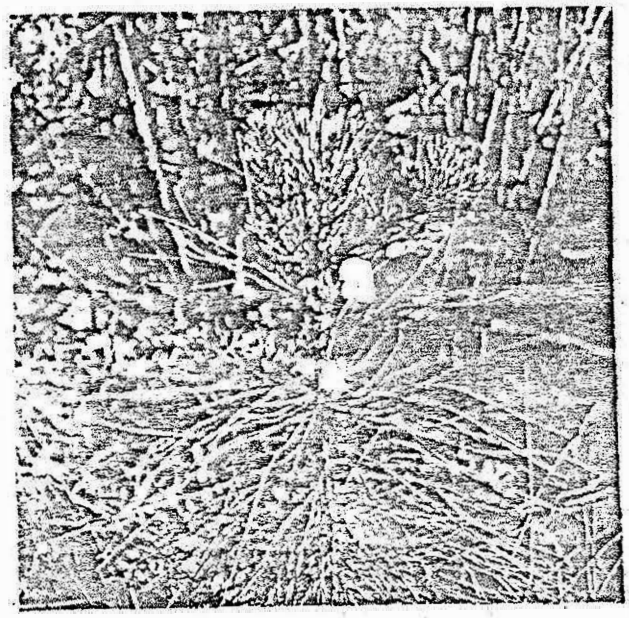

Figure 1. Pine webworm defoliation and frass mat on 1-year-old shortleaf pine.

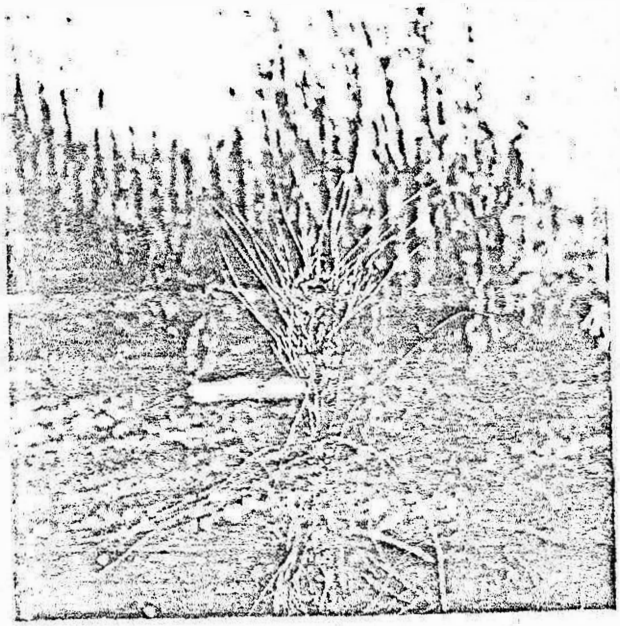

Figure 2. Pine webworm defoliation and pine tip moth damage terminals in a 1-year-old shortleaf pine plantation.

Table 1.. Live shortleaf pine trees observed for insect and/or disease damage

Caddo District, Compartment 35

	Count	% of total infested
Pine webworm	12	20
Pine tip moth	14	23
No insect of disease damage	38	63
Total trees observed	60	63

Winona District, Compartment 1408

	Count	% of total infested
Pine webworm	16	27
Pine tip moth	7	12
Mychorrizae (visible on roots) Mychorrizae	3	5
No insect or disease	41	68
Total trees observed	60	

All of the plantations that we visited were shortleaf. Even though the plantation was 1-year-old, most of the seedlings were less than a foot tall. The Ouachita has been planting very small seedlings during the past few years. The smaller seedlings have shorter roots; therefore, they are notas difficult to plant. Planting is a problem in the rocky soils found in this area. However, the small seedlings are not able to grow fast enough to keep from being overtopped by hardwoods. The plantations we visited were going to be replanted because of extremely poor survival.

Compartment 35 had more pine tip moth damage than pine webworm damage. Signs of past damage from these two insects in the remaining live trees were readily noticeable.

On January 17, Keith and Forrest drove to Perryville, Arkansas, and met with Ron Perisho at the district of the Ouachita National Forest. Ron relayed to us that they had poor survival in their shortleaf plantations during 1979 and that there was a large amount of pine tip moth and pine webworm damage in these plantations. We drove to Compartment 1408 to observe firsthand the damage in the plantations.

Once again, there were a large number of trees with pine tip moth and pine webworm damage (table 1). However, many trees had already died and it was impossible to tell what had caused the mortality.

The pine tip moth does not normally attack trees as small as these. However, during 1979 there was a very heavy population of pine tip moth in the surrounding trees. Thus, the population was looking for any available feeding sites.

Several seedlings were brought back to the laboratory and isolated for disease organisms. No pathogenic diseases were recovered from any of the seedlings brought back to the lab. The only fungus isolated was benefifial mychorrizae.

The seedlings growing in the plantations at the present time seem to be in fairly good shape except for some pine tip moth damage. This damage may cause forking and slowed growth in those trees that are heavily infested; however, it will not cause mortality in any of the young trees. Webbing and frass on the trees is a result of feeding during the last growing season. There were no pine webworms in any of the trees at the time of observation.

Pine webworm has been known in some cases to kill pine seedlings. However, if the seedlings survive the first growing season, the general rule is that they have survived the period in which there is any liklihood of mortality. However, in view of the fact that these seedlings from the Ouachita are small, this may not be the case in these particular areas. Pine seedlings usually have reached sufficient height and have enough needles at the end of the first growing season to sustain a population of pine webworm without mortality.

Although there was a large amount of mortality in the first year pines in these plantations, it is impossible at this time to determine the cause of the mortality in the plantations we visited. Many of the trees that were still alive in the plantations were J-rooted ot the seedling itself was leaning at an angle. Many J-rooted seedlings had bushy sprouts around the base of the tree at ground level.

The high seedling mortality experienced in these two districts during 1979 needs to be reduced. It is very probable that the cause of this mortality was a combination of numerous factors, any one of which would not have caused the high mortality by itself. However, many of the disease and insect problems, when coupled with weak seedlings, will cause mortality. Therefore, it is essential that the handling of the seedlings be expeditious and in a manner that does not allow the roots to dry out. It is very possible that a combination of the pine webworm, pine tip moth, and weather conditions caused seedling mortality during 1979.

Based on the seedlings that we pulled up while at these two plantations, I would say that the planting crews need to be more closely supervised to make sure that planting follows recommended guidelines, especially in the low site index areas.

Followup- [illegible] understand the influence of insects on the outplantings of shortleaf pine in the Ouachita, it would be necessary to establish monitoring plots in the plantations. These plots would have to be monitored throughout the growing season to see what effect insects and diseases have on the mortality of the planted seedlings.

F. L. OLIVERIA

FORREST L. OLIVERIA, Ph.D.
Supervisory Entomologist